

July 10, 1967

Dr. James L. Goddard  
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Dear Jim:

I don't know whether I need to make any formal acknowledgment to you about this, but I have decided for the time being not to abandon the ivory tower, and certainly for the next year, plan to continue as a professor at Stanford, barring only a few of the usual distractions. Among these, I have accepted membership on the NIMH Advisory Council, and this perhaps might give me some occasion to try to look you up since I will be in Washington more frequently than in the past. Let me say again how much I have enjoyed meeting you and talking to you, and what a terrific job I think you are doing.

Do you recall some while ago having offered to put me on the mailing list for the weekly news bulletin that was to be issued by your agency?

Medical World News for July 7 refers to a recent conference on the use of antibiotic food additives, and notes that you will soon be issuing new guidelines on the use of these materials. When this application of by-product materials from the antibiotic industry first became prevalent about ten years ago, I was personally quite alarmed on a priori grounds, but I guess since then I have not seen anything to substantiate that alarm from the standpoint of any concrete findings. I would not be particularly interested in this issue at the present time except that the possibility has crossed my mind that antibiotic supplements might conceivably play some role in stretching effective food supplies during potential local crises over the next ten or twenty years. There have been surprisingly few studies on the extension of the animal husbandry applications of antibiotic supplements to infant nutrition, perhaps, though, for some obvious reasons. As soon as a local situation is brought sufficiently into awareness for any kind of study to be done, it is very difficult to imagine going ahead with an experiment rather than improving the nutrition of the infants involved. However, the results that have been published do seem to be promising. I append a copy of a page or two out of Jukes's book "Antibiotics and Nutrition", which seems to be pretty close to the last word on the subject.

This may be putting you in a somewhat familiar spot: namely, that the standards which are entirely necessary for a country like the United States with very advanced standards of health may be inappropriate from a technical standpoint for other countries, but to promulgate our own standards does raise some political difficulties. For example, if there were to be some policy of indicated hazard in the use of antibiotic supplements in animals, it wouldn't bode very well for

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a campaign to try to stretch human food supplies by feeding comparable antibiotics to children. Furthermore, while it would be hardly justifiable to use antibiotics prophylactically on a large scale without more explicit indication, in this country. That argument does not necessarily apply elsewhere where the standards of local hygiene may not match ours in the first place. Indeed, it has been argued that the main positive value of antibiotic supplements in animal feeding is to compensate for suboptimal care in other respects.

With respect to the use of these supplements in domestic animals, there just might be some paradoxes. On the one hand, one of course must respect the a priori argument that any unnecessary use of antibiotics increases the prevalence of resistant forms and should be avoided on that account. On the other hand, if the antibiotics are suppressing animal reservoirs of microbial infection and breaking chains of contagion, the net effect might still be quite positive. Unfortunately, we have no way of estimating the number of *Shigella* and *Salmonella* infections that are never brought to man by this kind of prophylaxis, whereas the possible occurrence of drug resistant infections would be very visible.

Well, if I can just boil this letter down to a single point, it is that I hope you might keep in mind the possibility of applications of antibiotic supplements in human nutrition, if that had not already occurred to you.

Sincerely yours,

Joshua Lederberg  
Professor of Genetics